

REMARKS

Specification:

The Examiner noted an inadvertent typographical error in the first paragraph on page 1 of the specification as filed and requested appropriate correction (see item # 2 of Office Action). Applicant has amended the specification as requested.

Drawings:

The original drawings were objected to by the Examiner. Applicant is filing herewith two (2) sheets of formal drawings and respectfully requests that these be used to replace the informal drawings that are currently on file. No new matter is added by way of these formal drawings. Applicant further submits that the formal drawings satisfy the requirements of 37 C.F.R. § 1.84.

Claims 25-45:

As requested (see item # 1.5 of Office Action), Applicant hereby confirms election of claims 1-24 for the purposes of examination. Applicant further confirms the withdrawal of claims 25-45 and notes that these claims have been canceled in this Response. Cancellation of claims 25-45 is made without prejudice, without intent to abandon any original claimed subject matter, and without intent to acquiesce in any rejection of record. Applicant reserves the right to file one or more continuing applications containing these canceled claims.

Claims 5, 19 and 20:

Claims 5, 19 and 20 were objected to by the Examiner for being dependent on a rejected base claim. The Examiner also indicated that these claims would be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claim (see item # 4 of Office Action). In this Response, claims 5 and 19 have been re-written in independent form including all of the limitations of the base claim and any intervening claim. Claim 20 was not amended since it depends directly from claim 19. Claims 5, 19 and 20 as amended are therefore allowable. The objection as to claims 5, 19 and 20 should be withdrawn.

Claims 1-4, 6-18 and 21-24:

Claims 1-4, 6-18 and 21-24 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,083,123 (“Wood”) in view of U.S. Pat. No. 5,877,970 (“Nesbitt”) (see item # 3 of Office Action). Applicant respectfully disagrees and traverses the rejection for the reasons presented below. Some of these reasons were discussed during an Interview that the Examiner was kind enough to grant Applicant on October 6, 2003.

Claim 1:

The Examiner addresses independent claim 1 under Item # 3.1. The Examiner begins by arguing that the Wood reference discloses a method of designing a customized golf club (Figures 2-4), determining a tempo for a particular golfer (Col. 6 Lines 43-49), determining a force function based on club length (Col. 6 Lines 58-63, Col. 7 Lines 21-29, Col. 7 Lines 51-58, Col. 7 Lines 65-67, Col. 8 Lines 5-7, Col. 9, Lines 19-26, Col. 9 Lines 31-43), shaft flexibility (Col. 10 Lines 35-42), using different design parameters to calculate optimum values for the customized golf club (Figure 3, Items 310, 312 and 314). Applicant respectfully traverses this rejection.

First, Applicant notes that claim 1 of the present application involves a step of “determining a tempo *function relating tempo to club length* for a particular golfer”. Accordingly, even if the Wood reference does teach a step of “determining a tempo for a particular golfer”, the claimed step and the taught step are different.

Second, Applicant can find no teaching in the highlighted sections of the Wood reference (nor in any other section) that relate to a step of “*determining a perceived force function relating perceived force to club length and club head mass for the golfer*” as required in the second step of claim 1. Col. 6 Lines 58-63 discusses dynamic loft; Col. 7 Lines 21-29 discusses *shot preferences* and *shaft preferences*; Col. 7 Lines 51-58 discusses *lie angle*; Col. 7 Lines 65-67 discusses *shaft weight*; Col. 8 Lines 5-7 discusses *club swing weight*; Col. 9, Lines 19-26 discusses the FREQGRAD inference that seeks to assign *shaft flexes* to different clubs in a set; and Col. 9 Lines 31-43 discusses the LIEGRAD inference that seeks to assign *lie angles* to different clubs in a set. Absent some explanation from the Examiner, Applicant cannot see how these seemingly unrelated teachings combine to teach a step of “*determining a perceived force function relating perceived force to club length and club head mass for the golfer*”. Clarification

or withdrawal of this aspect of the rejection is respectfully requested.

Third, the Examiner provides no indication that the Wood reference teaches a method that includes steps of selecting *two* design parameters from the group consisting of target distance for the club; club length and shaft flexibility for the club; and preferred trajectory for a golf ball; and using the selected design parameters, *together with the determined tempo and perceived force functions*, to calculate optimum values for the unselected design parameter and the club head mass for the customized golf club. Even if true, the fact that Wood might use “different design parameters to calculate optimum values for the customized golf club” is insufficient to cover the latter limitations of claim 1.

The Woods reference therefore lacks several elements and limitations of claim 1 (and hence of claims 2-4, 6-18 and 21-22 that depend therefrom).

Nesbit is cited as teaching a method of designing a customized golf club based on the mass and design of the club head (Figure 2, Col. 2 Lines 30-34, Col. 1 Lines 30-45). Such teachings do not make up for the deficiencies of Wood. Accordingly, even if one skilled in the art (1) would have been motivated to combine the teachings of Wood and Nesbit and (2) would have had reasonable expectation of success in making the combination, the combination would not have included each and every limitation of claim 1 and could not render claim 1 obvious. Withdrawal of the rejection is respectfully requested.

Claims 2-4, 6-18 and 21-22:

The Examiner addresses dependent claims 2-4, 6-18 and 21-22 under items # 3.2-3.11. Claims 2-4, 6-18 and 21-22 depend from claim 1 and include each and every limitation of claim 1. Accordingly, the arguments presented above for claim 1 also apply here. Despite this, Applicant presents the following additional arguments:

With respect to claim 2 (item # 3.2), Col. 6 Lines 40-43 of Wood discusses *club head speed*. In contrast, claim 2 refers to the golfer’s *hand speed*. The distinction is significant – if a golfer swings two clubs having different lengths with the *same* hand speed, the club head speeds will be *different* (i.e., the longer of the two clubs will generate the greatest club head speed).

With respect to claim 3 (item # 3.3), Col. 1 Lines 3-45 of Nesbitt does not mention centripetal force.

With respect to claims 4 and 11-13 (item # 3.4), Col. 3 Lines 5-20 of Wood never

discusses effective arm length; linear or power law tempo functions of club length or club length plus arm length; nor does it discuss a perceived force function, even less a function that is independent of club length.

With respect to claim 9 (item # 3.7), Col. 3 Lines 11-20 of Wood discusses the *lie angle* of the club which is an entirely different measurement from the *lean angle* of the club. Put simply, the *lie angle* is the angle between the shaft and the ground when a golfer is viewed from the side (i.e., from behind the player looking along the line of play). In contrast, the *lean angle* is the angle between the shaft and the ground when a golfer is viewed from in front (i.e., facing the player at right angles to the line of play).

With respect to claim 10 (item # 3.8), Col. 6 Lines 43-49 of Wood makes no mention of a function relating tempo and club length and even less the use of an independent function.

With respect to claims 14-18 (item # 3.9), Col. 2 Lines 66-67, Col. 3 Lines 1-51, Col. 7 Lines 29-67, and Col. 8 Lines 1-10 of Wood never discuss *perceived force functions* (claims 14-17) or *tempo functions* (claim 16-17) relating perceived force or tempo to club length; nor do they discuss the concept of *perceived length* and methods for reducing *perceived length* between clubs (claim 18).

With respect to claim 21 (item # 3.10), Col. 8 Lines 25-67, Col. 9 Lines 1-19 of Wood never discuss *perceived force functions* or *tempo functions* relating perceived force or tempo to club length; nor do they discuss the concept of *perceived length* and methods for reducing *perceived length* between clubs.

Claims 23-24:

The Examiner addresses independent claim 23 under item # 3.1. Claim 24 depends from claim 23 and is addressed under item # 3.12.

Applicant first notes that the rejection made under item # 3.1 does not appear to relate to claim 23. Indeed, claim 23 is drawn to a method of determining *a perceived center of gyration for a golfer*, not to a method of designing a customized golf club. The Examiner does not point to *any* teachings in Wood that relate to *any* of the steps of claim 23, namely of (1) having the golfer swing a test club to determine its perceived length; (2) having the golfer swing a comparison club one or more times while adding weight to the comparison club at a selected point along the shaft until the golfer is unable to distinguish the perceived lengths of the test club

and the comparison club; and (3) determining the center point around which the test club and the weighted comparison club have identical radii of gyration. The concept of perceived length is never discussed by Wood (or Nesbitt), clarification or withdrawal of this aspect of the rejection is respectfully requested.

With respect to dependent claim 24 the Examiner notes that Wood discusses "rotation" at Col. 7 Lines 5-19 (see item # 3.12). In this section, Wood is referring to "rotation" of the club head around the axis of the shaft (i.e., causing opening or closing of the club face at impact). In contrast, claims 23 and 24 relate to a method for determining a golfer's center of gyration and then using this center to reduce variations in the radius of gyration across a set of clubs.

Conclusion:

As amended, the present application includes 24 total claims and 5 independent claims. Applicant has already paid for 45 total claims and 6 independent claims. Accordingly, it is Applicant's belief that no excess claims fees are associated with the claim amendments found herein. Should Applicant be in error please charge the excess claim fees and any additional fees that may be required, or credit any overpayment, to our Deposit Account No. 03-1721.

Respectfully submitted,

Dated: November 11, 2003



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Limited Recognition Under 37 CFR §10.9(b)

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